

REMARKS

This Amendment is filed in response to the FINAL Office Action dated March 13, 2008, and with the request for continued Examination (RCE) filed on even date herewith. All rejections and objections are respectfully traversed.

Claims 23 – 46 are pending in this case.

Claims 23 – 46 have been amended.

Claim 47 – 49 have been added.

Request for Interview

The Applicant respectfully requests a telephonic interview with the Examiner after the Examiner has had an opportunity to consider this Amendment, but before the issuance of the next Office Action. The Applicant may be reached at 617-951-2500.

Election/Restriction

At paragraphs 6 of the Office Action, the Examiner states that: “independent claims 23, 31, 39, and 40 (and their dependent claims) are now directed to an invention that is independent or distinct from the invention originally claimed [because] ...[n]ewly amended claims 23, 31, 39 and 40 are now drawn to an apparatus wherein a request to copy data blocks includes provisions whereby write requests for data blocks not already copied in the snapshot are buffered in a first in first out (FIFO) queue until the snapshot is completed...” (See Office Action, Page 3, Paragraph 6).

Applicant respectfully notes that the provision of the claims that the Examiner objects to has been removed from the claims. Accordingly, Applicant respectfully submits that claims 23, 31, 39 and 40 are in condition for allowance.

Claim Rejection – 35 USC §103

At paragraphs 7, 8, and 10 - 11 of the Office Action, claim 46 was rejected under 35 U.S.C. §103 as being unpatentable over Ohran et al., US Patent No. 5,649,152 (hereinafter Ohran) in view of Meyer, US Patent No. 5,867,733 (hereinafter Meyer).

The present invention, as set forth in representative claim 46, comprises in part:

46. A method, comprising:

receiving a write request, ~~wherein~~ the write request to modify a range of data bytes in a source ;
determining if the range of bytes is within a snapshot range;
determining that the range of bytes has not been written to a snapshot;
in response to determining that the range of bytes has not been written to a snapshot, copying the range of bytes from the source to a the snapshot;
updating a snapshot map, wherein the snapshot map indicates which blocks are located in the snapshot; and
modifying the range of bytes of data in the source from the write request.

Ohran discloses a system and method for providing a static snapshot, or image, of data stored on a mass storage system at a particular point in time. (See Ohran, Column 2, Lines 49 – 51). Specifically, Ohran waits until there is a write operation directed to a mass storage system. (See Ohran, Column 4, Lines 36 – 38). Using the mass storage write address specified in the write operation, it is determined whether there is a block of

data associated with that mass storage write address in preservation memory. (See Ohran, Column 4, Lines 43 – 47). If there isn't, a copy of the block of data currently located at the mass storage write address is placed in preservation memory. (See Ohran, Column 5, Lines 61 – 63).

Meyer discloses a system for direct transfer from one mass storage device to a second storage device using an enhanced integrated drive and electronics (EIDE) controller. A processor in a PC computer (host) initializes the transfer of data from one disk to a second disk. The transfer of data from one disk to the second disk is controlled by the data storage device controller, and is accomplished without employing the memory array and the computer bus.

Applicant respectfully urges that that both Ohran and Meyer, either alone or in combination, fail to teach nor suggest Applicant's claimed novel

determining if the range of bytes is within a snapshot range;

In short, Applicant's claimed system checks to see if the bytes in the range of the write request overlap with a range of bytes to be snapshot, and if there is no overlap, Applicant's claimed system simply performs the write request to the source. In Ohran, the system merely creates a static image of the mass storage system. Ohran and Meyer are completely silent with respect to Applicant's claimed system as highlighted above.

The Examiner urged that Ohran teaches Applicant's claimed novel **determining if the range of bytes is within a snapshot range** at Col. 4, Lines 14 – 19, Col. 1, Lines 20 – 26, and Col. 2, Lines 49 – 51. Applicant respectfully disagrees.

Specifically, at Col. 4, :Lines 14 – 19, Ohran states:

“Referring to FIG. 2, which is a flow diagram showing the steps of the method, the method starts at step 202 when a static image of the mass storage system is desired. This can be indicated by the running of a special program, an operating system call, or an operator command, as appropriate for the operating system and application.”

Therefore, Col. 4, Lines 14 – 19 is completely silent with respect to Applicant’s claimed *determining if the range of bytes is within a snapshot range*. Said differently, Col. 4, Lines 14 – 19 does not disclose a system or method that checks if the byte range of the write request is within the snapshot range as is claimed by Applicant and highlighted above.

Furthermore, at Col. 1, Lines 20 – 26, Ohran states:

”It is desirable during the operation of a computer system with a mass storage system, such as a magnetic disk, to periodically make a backup copy of the data stored on the mass storage system to allow for recovery in the event of a failure of the mass storage system. This is commonly done by reading the data stored on the mass storage system and writing it to a magnetic tape.”

Again, Col. 1, Lines 20 – 26 of Ohran is completely silent with respect to Applicant’s claimed *determining if the range of bytes is within a snapshot range*. Instead, this portion of Ohran, that the Examiner cites, merely states that a backup of a mass storage system is desired. Said differently, this section of Ohran does not disclose a method that checks if the byte range of the write request is within the snapshot range.

Moreover, at Col. 2, Lines 49 – 51, Ohran states:

“It is an object of this invention to provide a static image of data stored on a mass storage system as it existed at a particular point in time.”

Therefore, Col. 2, Lines 49 – 51 of Ohran is completely silent with respect to Applicant's claimed *determining if the range of bytes is within a snapshot range.* Instead, this portion of Ohran, that the Examiner cites, merely states that Ohran provides a static image of the data stored. Said differently, this section of Ohran does not disclose a method that checks if the byte range of the write request is within the snapshot range.

In summary, the three sections cited by the Examiner are completely silent with respect to Applicant's claimed novel *determining if the range of bytes is within the snapshot.* That is, all three sections, and the Ohran patent in its entirety fail to teach or suggest a system and method that checks if the byte range of the write request is within the snapshot range as is claimed by Applicant's.

Further, Applicant also submits that Meyer is completely silent with respect to Applicant's claimed system as highlighted above. Specifically, Applicant notes that the Examiner **never** asserts that Meyer teaches this portion of Applicant's claimed invention.

Accordingly, Applicant respectfully submits that Ohran and Meyer, either alone or in combination, are legally insufficient to render the presently claimed invention unpatentable under 35 U.S.C. §103 because of the absence in Ohran and Meyer of Applicant's claimed novel *determining if the range of bytes is within the snapshot.*

All independent claims are believed to be in condition for allowance.

All dependent claims are dependent from independent claims which are believed to be in condition for allowance. Accordingly, all dependent claims are believed to be in condition for allowance.

Favorable action is respectfully solicited.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,

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